Observations of Daniel's Comet (d 1907) at the Radcliffe Observatory, Oxford.

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The following observations were made with the 10-inch Barclay Equatorial, using the Grubb wire-micrometer with power 200.

Observer—Mr. W. H. Robinson.

Date.	G.M.T.	Local Sidereal Time.	Comet *minus* Star, (Corrected for Refraction only). R.A.	Comet *minus* Star, (Corrected for Refraction only). N.P.D.	No. of Comps.	Apparent R.A. of Comet.	Corrections for Parallax in R.A. p.	Log. $(p \times \Delta)$.	Apparent N.P.D. of Comet.	Corrections for Parallax in N.P.D. q.	Log. $(q \times \Delta)$.	Ref.
1907.	h m s	h m s	m s	′ ″		h m s	s		° ′ ″	″		
July 30	14 40 54	23 6 9	−0 23·64	...	12	4 15 13·88	−0·48	9·5658	...	...	...	(*a*)
30	14 45 31	23 10 48	...	−1 32·2	15	...	...	...	74 15 45·4	−8·2	0·7964	(*b*)
Aug. 11	15 6 44	0 19 22	+1 46·77	+1 10·6	4	6 8 1·20	−0·48	9·5798	72 37 17·1	−8·1	0·8110	(*c*)
13	15 49 58	1 10 37	−2 34·35	...	2	6 26 19·65	−0·46	9·5721	...	...	...	(*d*)
13	15 55 2	1 15 42	...	+0 3·2	2	...	...	...	72 42 12·2	−7·6	0·7931	(*e*)
13	16 3 55	1 24 36	−4 2·97	−1 17·3	1	6 26 24·67	−0·45	9·5661	72 42 12·7	−7·5	0·7889	(*f*)
18	15 38 57	1 19 16	+0 34·79	−0 25·1	8	7 9 6·57	−0·43	9·5785	73 15 14·9	−7·4	0·8134	(*g*)
20	15 57 13	1 45 29	+1 15·29	...	5	7 25 24·06	−0·41	9·5762	...	...	...	(*h*)
20	15 58 35	1 46 51	...	−3 8·8	3	...	...	...	73 35 32·5	−7·1	0·8093	(*i*)
26	15 48 44	2 0 37	−5 50·15	−3 3·5	3	8 10 54·23	−0·37	9·5750	74 53 6·1	−6·6	0·8255	(*j*)
Sept. 8	16 16 24	3 19 38	+5 56·09	−3 33·4	1	9 37 25·18	−0·29	9·5672	78 40 40·6	−5·3	0·8335	(*k*)
8	16 41 24	3 44 42	+3 45·77	−7 4·4	4	9 37 32·08	−0·29	9·5683	78 40 59·2	−5·2	0·8258	(*l*)
11	16 41 14	3 56 21	−7 38·65	+7 44·9	2	9 55 19·48	−0·27	9·5671	79 40 32·0	−5·0	0·8293	(*m*)
11	16 47 46	4 2 54	−3 16·37	+1 35·7	1	9 55 20·33	−0·27	9·5671	79 40 39·8	−5·0	0·8276	(*n*)

Observer's Remarks.

(*a*) (*b*) The nucleus or condensation of comet (magnitude 8, and diameter 2″ or 3″) shows up on the preceding side of Coma, the radius of which is about 1′. For a long time after these observations were taken the comet continued to be easily seen in strong twilight.

(*c*) Comet conspicuous to the naked eye, magnitude 2. Tail precedes, 2° or 3° in length. In the 10-inch, the condensation, though large and diffused, is not brighter than magnitude 6·5.

(*d*, *e*, *f*) To the naked eye the comet is nearly as bright as γ Geminorum, magnitude 2. The tail can be traced to a distance approximately equal to that of Pollux from Castor. In the 10-inch the condensation appears large, diffused, and somewhat triangular in form, with a brightness much below that of the second comparison-star, magnitude 7·8 (*A.G.*), but superior to that of the first, magnitude 9·0.

(*g*) Condensation diffused and large, not brighter than the comparison-star, magnitude 8. To the naked eye, tail appeared 7° or 8° long, and nearly reaching to γ Geminorum.

(*h*, *i*) Images very diffused this morning. A nucleus occasionally shows up, slightly south of the observed centre of condensation, which spreads over many seconds of arc. The tail of the comet extends to about midway between the nucleus and γ Geminorum. Altitude small; twilight coming on.

(*j*) Observed through haze in intervals of cloud. The comet's tail is distinctly visible to the naked eye, notwithstanding low altitude, haze, moonlight, and twilight.

(*k*) Altitude of comet only 6°.

(*k*, *l*) Condensation large and diffused.

(*m*, *n*) Comet very low. The diffused condensation is slightly brighter than the second comparison-star, 7·2 magnitude, but much fainter than the first, 6·0 magnitude. The comet was just visible in the 10-inch at $17^h\ 10^m$ G.M.T.

On September 19, the comet was seen for a short interval at a low altitude; magnitude in the 10-inch, 7·5. Observations were prevented by the rapidly increasing twilight, and by the remoteness of the only available comparison-star, which preceded the comet $8^m\ 30^s$ in R.A.

[TABLE

Assumed Places of the Comparison-Stars.

Ref.	Mean R.A. 1907·0.	Reduction to Appar. R.A.	Mean N.P.D. 1907·0.	Reduction to Appar. N.P.D.	Authority.
	h m s	s	° ′ ″	″	
(*a*) (*b*)	4 15 37·21	+0·31	74 17 16·8	+0·8	Küstner, *Bonn Veröff.*, No. 4, p. 97.
(*c*)	6 6 14·32	+0·11	72 36 4·7	+1·8	Berlin, A (*A.G.*) 1973
(*d*, *e*)	6 28 53·94	+0·06	72 42 7·1	+1·8	Berlin, A (*A.G.*) 2231
(*f*)	6 30 27·59	+0·05	72 43 28·2	+1·8	Berlin, A (*A.G.*) 2252
(*g*)	7 8 31·76	+0·02	73 15 38·2	+1·8	Berlin, A (*A.G.*) 2702
(*h*) (*i*)	7 24 8·76	+0·01	73 38 39·6	+1·7	Berlin, A (*A.G.*) 2862
(*j*)	8 16 44·43	−0·05	74 56 8·1	+1·6	Berlin, A (*A.G.*) 3303
(*k*)	9 31 29·11	−0·02	78 44 12·8	+1·2	Leipzig, I (*A.G.*) 3809
(*l*)	9 33 46·34	−0·03	78 48 2·5	+1·1	Leipzig, I (*A.G.*) 3820
(*m*)	10 2 58·18	−0·05	79 32 46·1	+1·0	Leipzig, I (*A.G.*) 3952 (P. M.'s $-0^s·0082$ and $+0''·038$.
(*n*)	9 58 36·74	−0·04	79 39 3·1	+1·0	Leipzig, I (*A.G.*) 3933

In the computation of the parallaxes the adopted value of the Sun's mean horizontal parallax is 8″·80, and the geocentric distances Δ are taken from the *Astronomische Nachrichten*, Nos. 4191, 4194, and 4196.

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The Orbit of Jupiter's Eighth Satellite. By P. H. Cowell and A. D. Crommelin.

In this paper the time is measured in units of 16 days from 1908 January 12·0 Paris mean time. The astronomical unit of length is used.

Paris mean time has been used because the Connaissance des Temps gives both heliocentric and geocentric longitudes and latitudes of Jupiter referred to the same equinox, the true equinox of date.

With 16 days as the unit of time,

$$\log \text{mass of Sun} = 8·87\,943$$
$$\text{,,} \quad \text{,,} \quad \text{Jupiter} = 5·85\,934$$

It will be seen in the later parts of this paper that the Sun's disturbing force varies during the early part of 1908 between 10 and 6 per cent. of the attractive force of Jupiter, and is therefore by no means negligible. Moreover, if the attempt were made to express the co-ordinates of the satellite with the help of Delaunay's algebraical lunar theory, it would be found that Delaunay's quantities e, e' and m take such large arithmetical values that Delaunay's series are insufficient for the purpose. Hence it is